

The background features a complex, circular, futuristic graphic. At the center is a glowing blue sphere with a grid of dots. Above the sphere is a white, three-dimensional knot-like symbol. Below the sphere, the text 'INPHYSEC' is written in a large, white, sans-serif font. Underneath that, in a smaller, white, sans-serif font, is the tagline 'YOUR TRUSTED SECURITY PARTNER'. The entire central graphic is surrounded by a circular border containing various blue and white icons representing different aspects of cybersecurity: a magnifying glass, a cloud, a network diagram, a smartphone, a person icon, a link, a status bar, and a server rack. The overall color scheme is dark blue with glowing white and light blue elements.

**INPHYSEC**

YOUR TRUSTED SECURITY PARTNER

**InPhySec**  
**Intelligence-led**  
**cyber security**  
**specialists**

Jonathon Berry  
Principal Consultant

# It's not if, but when...

- Global cybercrime is estimated to cost US\$10.5 trillion annually by 2025.
- Sophisticated tools and techniques are readily available.
- No protection provided by New Zealand's geographical location.
- Most protective security technologies are also available to criminals and other malicious actors.



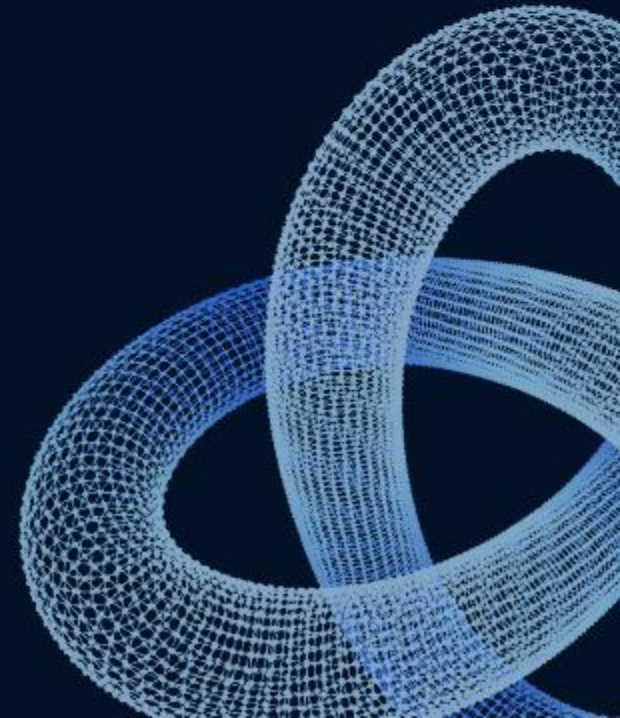
Willie Sutton  
FBI Top Ten, 20 March 1950

# Information security



- Confidentiality / privacy
- Integrity
- Availability

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# Biggest security issues

- Legacy technology (OT) *and* a rapidly changing (IT) technological landscape
- The Internet/cyberspace is an anarchic environment
  - No single authority / law
  - Domain of warfare and piracy
- Threat community evolving faster than protective community
- Inability to comprehensively assess risk and business impact
- Seemingly implausible risks becoming manifest

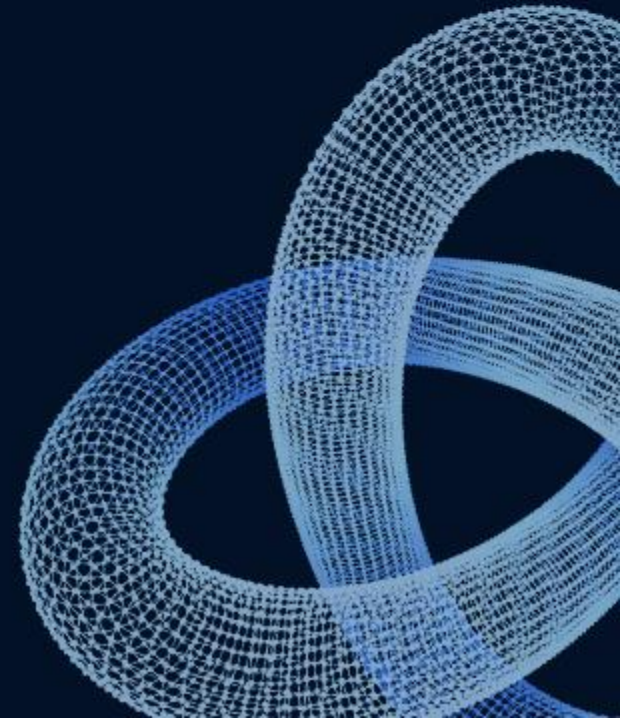


By Carl Röchling (1855-1920), Public Domain

# Energy sector concerns



- NZX DoS attacks, Aug '20 +
  - Unprecedented magnitude for NZ
- Colonial Pipeline, USA, May '21
  - President Biden declared a state of emergency
- Pressure to maintain services
- Attacks on critical infrastructure as a part of geo-political manoeuvre and conflict





# KEY ELECTRIC GRID COMPONENTS

## GENERATION AND STORAGE

### RENEWABLE POWER SOURCE



ENERGY STORAGE EQUIPMENT

### POWER PLANT



STEP-UP SUBSTATION

## TRANSMISSION

STEP-DOWN SUBSTATION



LONG-DISTANCE TRANSMISSION



## DISTRIBUTION

### CUSTOMERS

INDUSTRIAL



COMMERCIAL



RESIDENTIAL

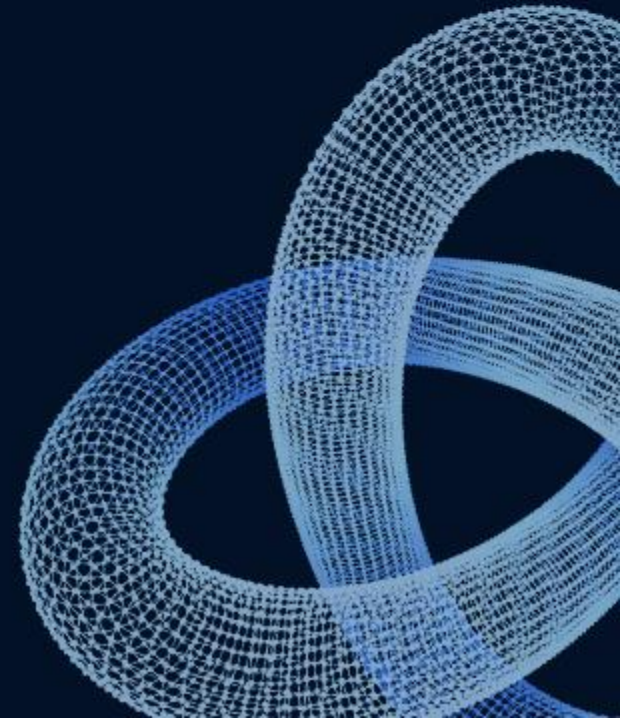


# The future



- Quantum computing
- Artificial Intelligence / Machine Learning
- Faster networks / greater computing power
- Increased population
- Ongoing anarchy and warfare

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# Things to do /where to get help

- Understand your risks / raise awareness
- Independent assessment of your position
- Separate your IT operations from your security operations
- Utilise community resources; NCSC/CERT, US CISA, vendor communications
- Use lists; NZ CERT 'Top 11 tips', ASD 'Essential Eight'
- Consider standards; NIST CSF, ISO 27001, sector relevant standards

[ncsc.govt.nz](https://ncsc.govt.nz)

[cyber.gov.au](https://cyber.gov.au)

[cisa.gov](https://cisa.gov)

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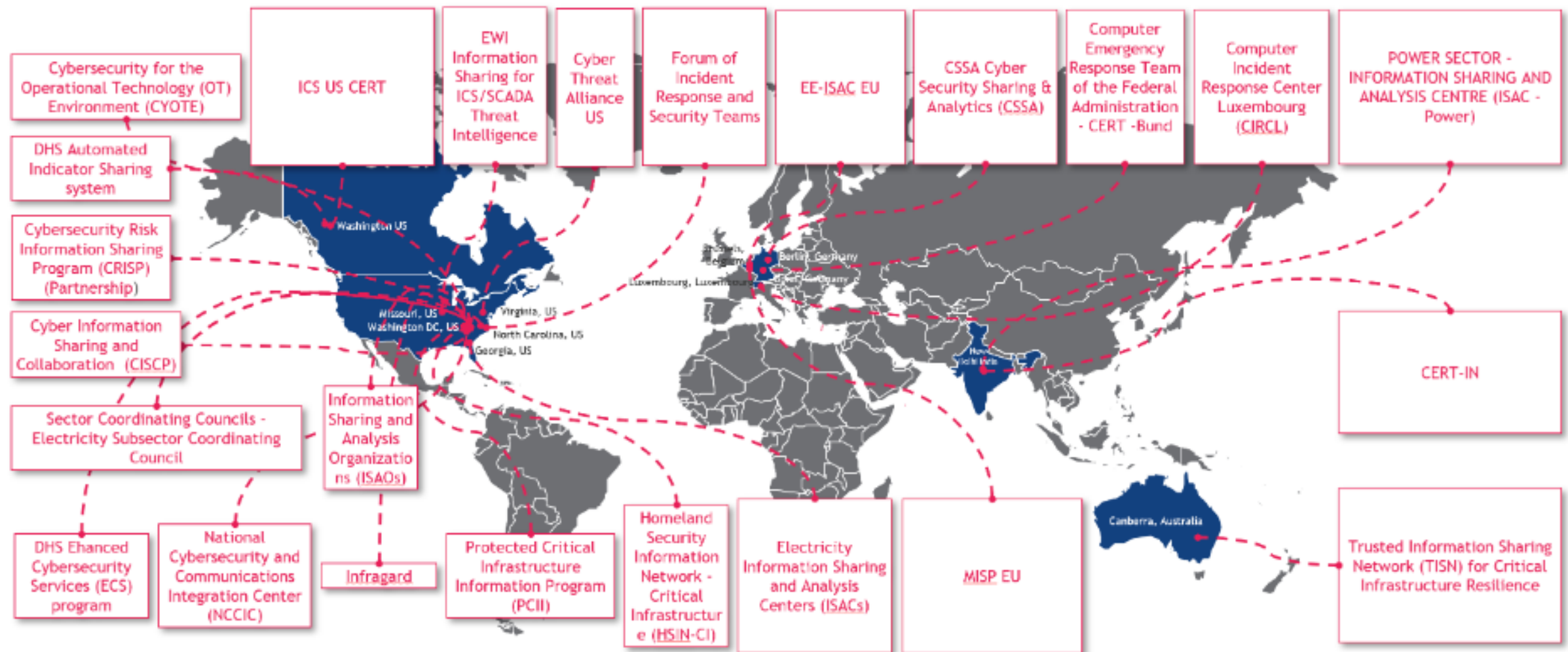


**Trust, but verify.**



# Information sharing platforms around the world

(Selection)



Non-exhaustive list of global energy-related cyber security information sharing initiatives Image: Institute for Security and Safety at Brandenburg University and BCG analysis

# Things to do

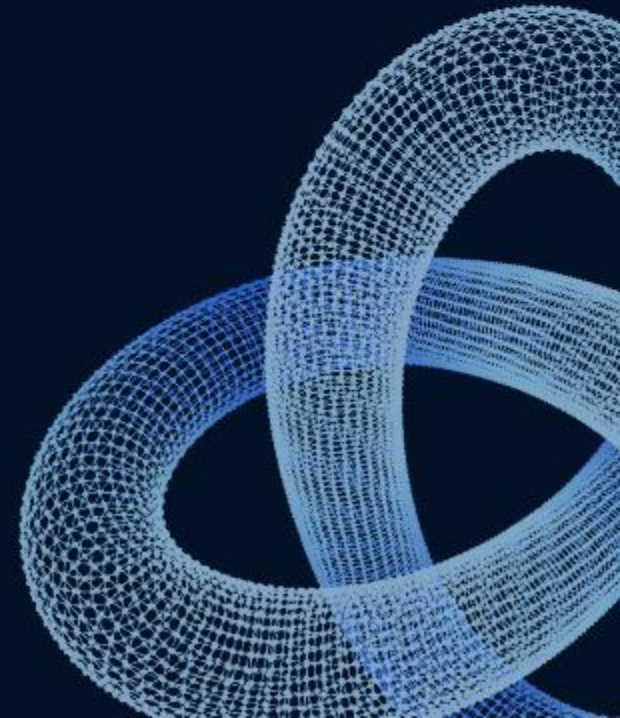
- Keep software up to date / patch
- Minimise privileges
- Complex passwords and managers
- Use Multi-factor authentication
- Use protection from malware
- Segregate assets
- Control access
- Back-up, multiple times, air gap
- Hardening
- Exercise incident response



# How InPhySec helps organisations



- Board and senior management support
- Risk and threat assessment
- Use of protective security frameworks and standards
- Managed Security Services
- Technical testing
- Incident response and digital forensics, post incident reviews







# INPHYSEC

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